puting the extreme and mean monthly ranges are given for each of the regular Weather Bureau stations in Table I. The largest values of the greatest daily ranges were: St. Luis Obispo, 52; Carson City, 50; Pierre, 49; Winnemucca and North Platte, 48; Idaho Falls, Miles City, and Huron, 47. The smallest values were: Key West, 10; Block Island and Tatoosh Island, 14; Woods Hole, 15; Nantucket, 17; Eastport and Jupiter, 19; Galveston, San Diego, and Astoria, 20.

Among the *extreme monthly ranges* the largest were: Williston, 72; Pierre, 71; Miles City, 70; Lander and Huron, 69; Havre, 68. The smallest values were: Key West, 17; Tatoosh Island, 18; Astoria, 25; Hatteras, 26; Corpus Christi, San Diego, and Fort Canby, 27.

The *accumulated monthly departures* from normal temperatures from January 1 to the end of the current month are given in the second column of the following table, and the average departures are given in the third column for comparison with the departures of current conditions of vegetation from the normal condition.

Districts.	Accumulated departures.		Districts.	Accumulated departures.	
	Total.	Average.		Total.	Average.
	°	°		°	°
Middle Atlantic	+ 1.7	+ 0.2	New England	− 1.7	− 0.2
South Atlantic	+ 9.8	+ 1.0	Florida Peninsula	−11.6	− 1.2
East Gulf	+ 2.2	+ 0.2			
West Gulf	+11.6	+ 1.2			
Ohio Valley and Tenn.	+ 8.5	+ 0.8			
Lower Lake	+ 6.0	+ 0.6			
Upper Lake	+18.4	+ 1.8			
North Dakota	+ 3.1	+ 0.3			
Upper Mississippi	+17.0	+ 1.7			
Missouri Valley	+16.5	+ 1.6			
Northern Slope	+ 6.4	+ 0.6			
Middle Slope	+22.8	+ 2.3			
Abilene (southern Slope)	+22.8	+ 2.3			
Southern Plateau	+ 7.1	+ 0.7			
Middle Plateau	+ 3.2	+ 0.3			
Northern Plateau	+16.7	+ 1.7			
North Pacific	+ 2.2	+ 0.2			
Middle Pacific	+ 1.2	+ 0.1			
South Pacific	+ 3.8	+ 0.4			

MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by the weight of the vapor coexisting with the air contained in a cubic foot of space, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-point for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, is given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the temperature of the wet-bulb thermometer; an evaporometer may be so constructed as to give the *quantity* of water evaporated from a similar surface during any interval of time. Such an evaporometer, therefore, would sum up or integrate the effects of those influences that determine the temperature as given by the wet bulb; from this quantity the *average humidity of the air* during any given interval of time may be deduced.

Measurements of evaporation within the thermometer shelters are difficult to make so as to be intercomparable at temperatures above and below freezing, and they may be replaced by computations based on the wet-bulb temperatures. The absolute amount of evaporation from natural surfaces not protected from wind, rain, sunshine, and radiation, are being made at a few experimental stations and will be discussed in special contributions.

Sensible temperatures.—The sensation of temperature experienced by the human body and ordinarily attributed to the condition of the atmosphere depends not merely on the temperature of the air, but also on its dryness, on the velocity of the wind, and on the suddenness of atmospheric changes, all combined with the physiological condition of the observer. A satisfactory expression for the relation between atmospheric conditions and nervous sensations has not vet been obtained.

PRECIPITATION.

[In inches and hundredths.]

The *distribution of precipitation* for the current month, as determined by reports from about 2,500 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, and III. The total precipitation for the current month was heaviest in Nova Scotia, and also from 6 to 8 inches in small isolated regions in Louisiana and Texas and on the coast of Washington. The larger values at regular stations were: Halifax, 15.3; Charlottetown, 10.4; Port Eads, 8.8; Sydney, 7.8; Eastport, 7.1; Quebec, 7.0.

Details as to *excessive precipitation* are given in Tables XII and XIII.

The *years of greatest and least precipitation* for October are given in the REVIEW for October, 1890. The precipitation for the current month was the greatest on record at: San Antonio, 6.04; Corpus Christi, 4.12. It was the least on record only at: Rochester, 0.58.

The *diurnal variation*, as shown by tables of hourly means of the total precipitation, deduced from self-registering gauges kept at the regular stations of the Weather Bureau, is not now tabulated.

The *current departures* from the normal precipitation are given in Table I, which shows that precipitation was in excess in the Canadian Maritime Provinces, the west Gulf and southern Plateau stations. It was generally deficient elsewhere. The large excesses were: Halifax, 9.6; Charlottetown, 5.9; Port Eads, 5.4; Pensacola and Sydney, 3.5; Quebec, 3.3. The large deficits were: Key West, 3.3; Jupiter, 3.2; Alpena, 3.0; Raleigh and Charleston, 2.8; Charlotte, 2.7.

The *average departure* for each district is given in Table I. By dividing each current precipitation by its respective normal the following corresponding percentages are obtained (precipitation is in excess when the percentage of the normal exceeds 100):

Above the normal: New England, 105; east Gulf, 151; west Gulf, 156; Missouri Valley, 125; middle Slope, 139; southern Slope (Abilene), 198; southern Plateau, 232; south Pacific, 267.

Below the normal: Middle Atlantic, 54; south Atlantic, 60; Florida Peninsula, 53; Ohio Valley and Tennessee, 60; lower Lake, 45; upper Lake, 73; North Dakota, 77; upper Mississippi, 89; northern Slope, 87; middle Plateau, 51; northern Plateau, 63; north Pacific, 82; middle Pacific, 81.

The *total accumulated monthly departures* from normal precipitation from January 1 to the end of the current month are given in the second column of the following table; the third column gives the ratio of the current accumulated precipitation to its normal value.

Districts.	Accumulated departures.	Accumulated precipitation.	Districts.	Accumulated departures.	Accumulated precipitation.
	Inches.	*Per ct.*		*Inches.*	*Per ct.*
Lower Lake	+ 1.90	106	New England	− 2.50	93
North Dakota	+ 1.20	107	Middle Atlantic	− 4.60	88
Upper Mississippi	+ 1.40	105	South Atlantic	−11.40	76
Missouri Valley	+ 0.70	102	Florida Peninsula	− 4.60	90
Northern Slope	+ 0.60	104	East Gulf	− 6.70	86
Southern Plateau	+ 1.50	121	West Gulf	− 8.10	78
Middle Plateau	+ 2.70	129	Ohio Valley and Tenn.	− 3.30	92
North Pacific	+ 1.70	104	Upper Lakes	− 2.10	93
Middle Pacific	+ 2.40	111	Middle Slope	− 1.60	92
			Abilene (southern Slope)	− 3.40	85
			Northern Plateau	− 1.00	92
			South Pacific	− 1.30	85